

Title: Modified Barley α -Glucosidase
Inventor(s): Henson/Muslin/Clark
Application No.:
Docket Number: 960296.97486

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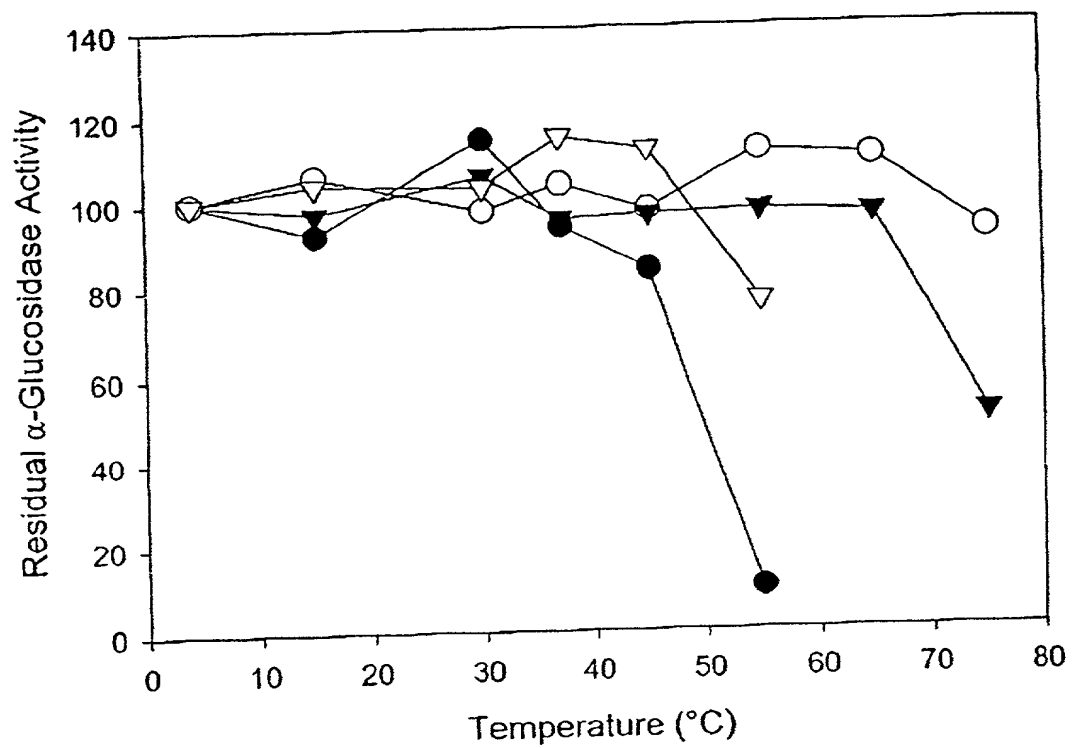


FIG 1

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BARLEY	MA-----TVGV-----LILCLCLCLFAPRLCSSKEEGPLAAR---	(32)
S. BEET	Me-----rskipryicptlavvLpLvLCmvvegattSKnchngeAigy	(44)
SPINACH	MkkkipsialGi-----LLVfLLqyLVAgistSendpegvgy---	(38)
ARABID.	Me-----slhwfpnif----fvvvfLxssqvleeEEstvvgy---	(37)
BARLEY	-----TVLAVAVTMEG-----ALRAEAATGGRSSTG-----DVQRLAVY	(66)
S. BEET	yqvknaKvdnstgkal-----tallqlirnsppvyp-----DihfLsft	(83)
SPINACH	-----gykvksVkvde-----gtRrsLcalpqlvknssvypgDiQLLeat	(78)
ARABID.	-----gyvvreVgvdsnrqvltakldlikpsvyp-----DiksLnLh	(76)
BARLEY	ASLETDSRLVRITDADHPRWEVPQDIIPRPAPGD-----VLHDAPPA	(109)
S. BEET	ASfEeDdtLRiRfTDAnnxrWE.FnevlPRFPpppspplaslqHlpkPi	(133)
SPINACH	ASLEendRLVRITDAKlRWEiPdnlhRhqPpp-----ppphals	(121)
ARABID.	VSLETseRLRiRITDssqRWEiPervIPRagnhs-----prifstee	(119)
BARLEY	S-----S--APLQCRVLSPAGSDLVLTU-H-ASPFRFTVSRSTGDT	(147)
S. BEET	p-----q--nqpttLShphSDlafTlfH-ttFFgFTiYrkSThdv	(172)
SPINACH	lyrtllspt--tnxrkillShpnsDLtfeL-inttPFgFTiSRKSThdv	(168)
ARABID.	d-----ggnsPennfladPssdlvftlh-n-ttFFgFsVSRRSeGDi	(159)
BARLEY	LFDTPAG-----L-----VFRDKYLEVTSALPAGRASLYGLGHTK	(183)
S. BEET	LFDatPipnpttL-----iykDqYLqisSsLPaqqAhLYGLGHTK	(215)
SPINACH	LFDatPdpnrntfL-----iFidqYLhLTSSLFgtRAhiYGLGEHsK	(211)
ARABID.	LFDtsPd-----ssdsntyfiFkDqfLqisSALPenRsnLYGIGHTK	(202)
BARLEY	SSFRLRHNDSTFLWNADIGASYVDVNLVYGSHPFYMDVRAP-----GTAH	(227)
S. BEET	ptFqLaHnqilTLWNADIGAsfnrDNLVYGSHPFYMDVRsspmv---GstH	(262)
SPINACH	ptFqLaHnqilTLWraADIPsSnpDVNLVYGSHPFYMDVRsspsva---GstH	(258)
ARABID.	rSFRLipgetmTLWNALtGsenpDVNLVYGSHPFYMDVRgakeeagTtH	(252)
BARLEY	GVLLSSNGMDVLYGGSYVYKVIQGVLDFFYFAGPNPLAVVDQYTQLIA	(277)
S. BEET	GVfLLnSNGMDVeYtGcrtTYKVIGGiDLYiFAGrtPemViDQYTKLIg	(312)
SPINACH	GVLLLSNGMDVYeYtGcrtTYKVIGGiDLYiFAGPsPggvVeQfTrvig	(308)
ARABID.	GVLLLSNGMDVkyYcChriTYnVIGGVdLYvFAGPsPemVmnQYTeLIg	(302)
BARLEY	RPAPMPYWSFGFHQCRCYGLNVSDLERVARYAKARIPLVMMWTDIDYMD	(327)
S. BEET	RPAPMPYwafGFHQCRCwSYrdvneiEtVvdkYaeARJPLEVMWTDIDYMD	(362)
SPINACH	RPAPMPYwafGFQCRCYghdVyeLqcvvAgYAKAKIPLVMMWTDIDYMD	(356)
ARABID.	RPAPMPYWSFGFHQCRCYGLNVSDLEyvvdgyAKAg:PLEVMWTDIDYMD	(352)
BARLEY	GFKDFTLDRVNFIAAEFLRPFVDRLEHNAQKYVLILDPGIKVDPICATYGT	(377)
S. BEET	aFKDFTLDPVhFpLdkmqgFVtkLHRNgQryVpILDPGI---ntnksYGT	(409)
SPINACH	ayKDFTLLpVNFpLdkmkfVnnLHKNgQKYVvILDPGI---stnKTYeT	(405)
ARABID.	GyKDFTLDPVNFpLdkmqgFVDTLHKNgQKYVLILDPGI---gvDssYGT	(399)
BARLEY	FVRGMQODIFLKRNGTNFVGNVWPGDVYFPDFMHFAAAEFWAREISLFRR	(427)
S. BEET	FVRGMQsnvFikRNGnpylGsVWPGpVYyFDfIdPAAreFwvdEikrFrD	(459)
SPINACH	yVRGMkhDvFLKRNGkpylGeVWPGpVYFPDFlkPaAltFwtdEikrFln	(455)
ARABID.	ynRGMeadvFikRNGepylGeVWFGkVYFPDFlnPAAATfWsnEikmfqe	(449)
BARLEY	TIFVDGLWIDMNEISNFYN--PEPMN--ALDDPPYRINNDCTGRPINNKT	(475)
S. BEET	ilPIdGiWIDMNEasNFiteaPcPgS--tLdnPPYkINNsggrvPINsKT	(507)
SPINACH	ilPVDGLWIDMNEISNFis--spPipgstLdnPPYkINNsgvmLPiNKT	(503)
ARABID.	ilPIdGLWIDMNEISNFit--spLssgeeeLEDPPYkINNsgdkRPINNKT	(497)
BARLEY	VRPLAVHYGGVTEYEENLFLGLEARATGRGVLRDTGRRPFVLSRSTFVG	(523)
S. BEET	ipatAmHYGnvTEYnaHNLyGfLEsqATreslvRpattRqPFLSRSTFaG	(557)
SPINACH	ipFtAmHYGciPEYnvHNLFCyLEArvTraaliktEkrPFVLSRSTFSG	(553)
ARABID.	VpatsihfGnisEYdaHNLyGfLEAKATHqavvd:TGKRPFLSRSTFVs	(547)
BARLEY	SGRYTAYWTGDNAATWCDLRYSTINTMLSFGLFGMPMIGADICGPNNGTTE	(575)
S. BEET	SGkYTAhWTGDNAArWdLqYSipTMLnFGLFGMPMIGADICGfaesTTE	(607)
SPINACH	SGkYTAhWTGDNAATWdLqYSipMLDFGLFGIPMvGADICGfLGNITE	(603)
ARABID.	SGkYTAhWTGDNAakWeDLqYSipgLnFGLFGIPMvGADICGfshdTTE	(597)
BARLEY	ELCGRWICLGAfYPPSRDHSaIFTVRRELYLWESVAASGRKALGLRYCLL	(623)
S. BEET	ELCGRWICLGAfYPPSRDHSaIdTthqELYLWESVAASaRvLGLRYCLL	(637)
SPINACH	ELCGRWICLGAfYPPSRDHSsIgTtyqELYrWeSVAASaRvLGLRYCLL	(653)
ARABID.	ELCGRWICLGAfYPPSRDHSs-gTarqELYLWdSVAASaRvLGLRYCLL	(647)

FIG 2

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BARLEY	PYFYTLMYEAHMTGAPIARPLFFSYPHDVATYGVDRQFLGRGVLVSPVL	(673)
S. BEET	PYYTYLMydAnlrGcPIARPLcfttPdDVATYGiesQFLIGRGImVSPVL	(707)
SPINACH	PYFYTLMYEAqlngiPIARPLFFsfPdDikTYGiesQFLLGKGVmVSPVL	(703)
ARABID.	PhlyTLMYEAHvsCnPIARPLFFsfPgDckTYeiDsQFLIGKsimVSPaL	(697)
BARLEY	EPGPITVDAYFFPAGRWRLYDYSLAVATRTGKHVRLPAPADTVNVHLTGG	(723)
S. BEET	qPGssiVnAYsPrGnWvsLenYtesVsvsaGtyVsLsAppDhiNVHiheG	(757)
SPINACH	kPGvvsVtAYFFrGnwfdLfdYtresVtasTGryVtLsAppDhiNVHiqeG	(753)
ARABID.	kqGavaVDAYFFPAGnwfdLfnYSfAVggdsGKHVRLdtPADhVNVHvreg	(747)
BARLEY	TILFLOQSALTTSRARRTA FHLLVALAEDGTASGYLFLLDDGDSPEYGR-R	(772)
S. BEET	nIvamQgeAmTfqaARsTpFHLLVvmsdhvastGeLFLDnGiemdiGg-p	(806)
SPINACH	nILamQgkAmTtqaARKTpFHLLVvmsdcGasfGeLFLDDGvertmGvnR	(803)
ARABID.	sIvamQgeALTTrdARKTpyqLLVvaerleniSGeLFLDDGenlrmGa-g	(796)
BARLEY	S---D-WSMVRFNYPKI PNKGAIKVKSEVVHNSYAQSRTLVIKVVLMGH	(816)
S. BEET	g---gkwTivRFfaesgiN---nlTisSEVVnrgYAmSqrwmdKitilGI	(851)
SPINACH	g---k-WtFvKf--iaaeaKqtcitSdVVegefAvsQkwVIGKvtiLG	(847)
ARABID.	ggrrD-WtLVkf--rcyvtgkevvlrSEVVnpeYaskmkwaIgKVtFvGf	(843)
BARLEY	RSPAAPKKLTIVHNSAEVEASSSAGTRYQNAGGLGGVAH-IGGLSLVUGE	(867)
S. BEET	krrvkiKeyTVqkdagaikvkglgrrtsshngGgffvsv-IedLrqLVGq	(900)
SPINACH	RkgtkingyTVrtgavtrkgdkSkIkstpdrrkGefiVAe-IsGLnLlIGr	(896)
ARABID.	envenvKtyeVrtserlrepreSlktvscnddprflsvevekLSLlVGK	(893)
BARLEY	EFELKV---AMSY	(877)
S. BEET	aFkLelefegAtrv	(914)
SPINACH	EFkL-----vli	(903)
ARABID.	kfEmri-----rlt-	(902)

FIG 2

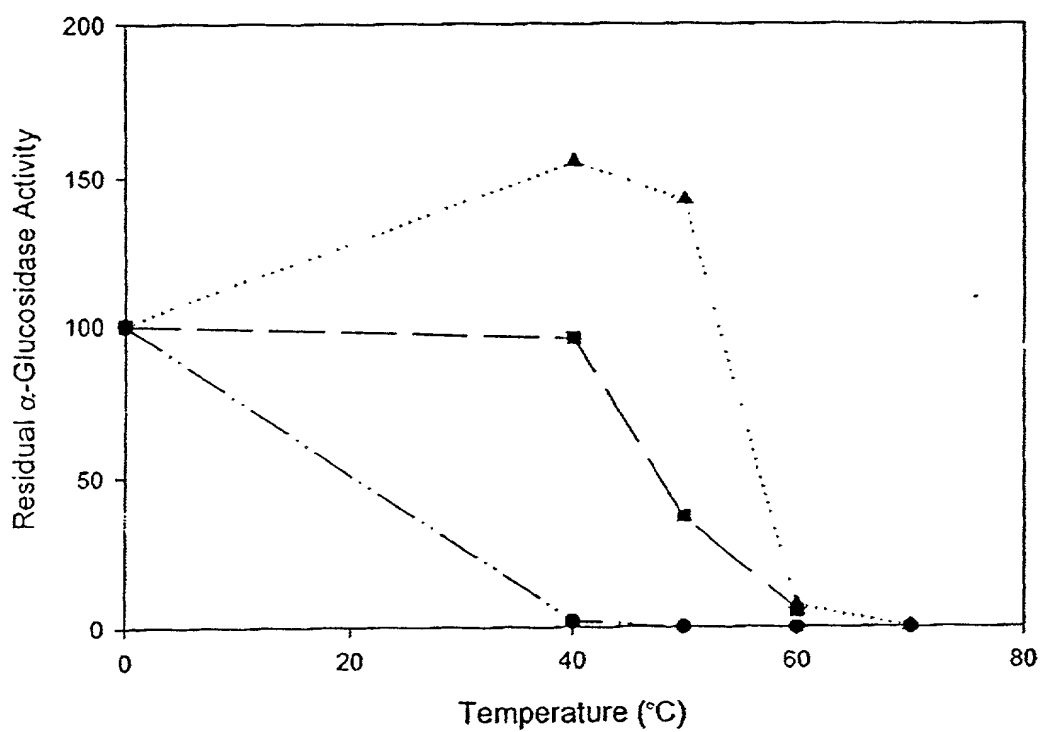


FIG 3

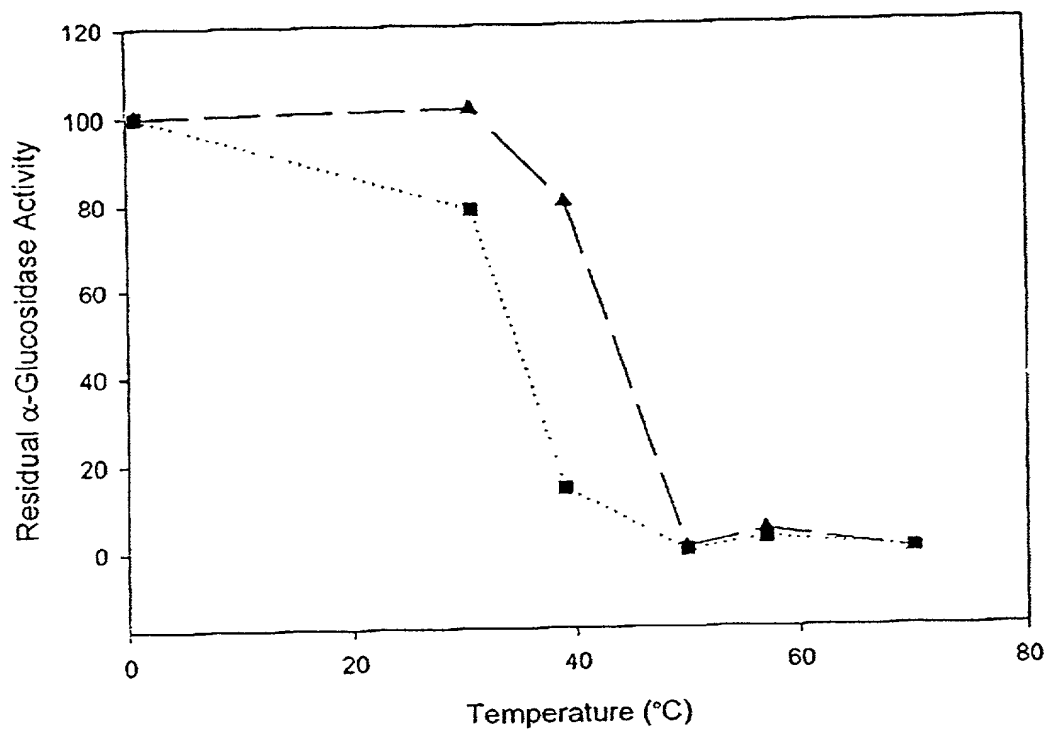


FIG 4

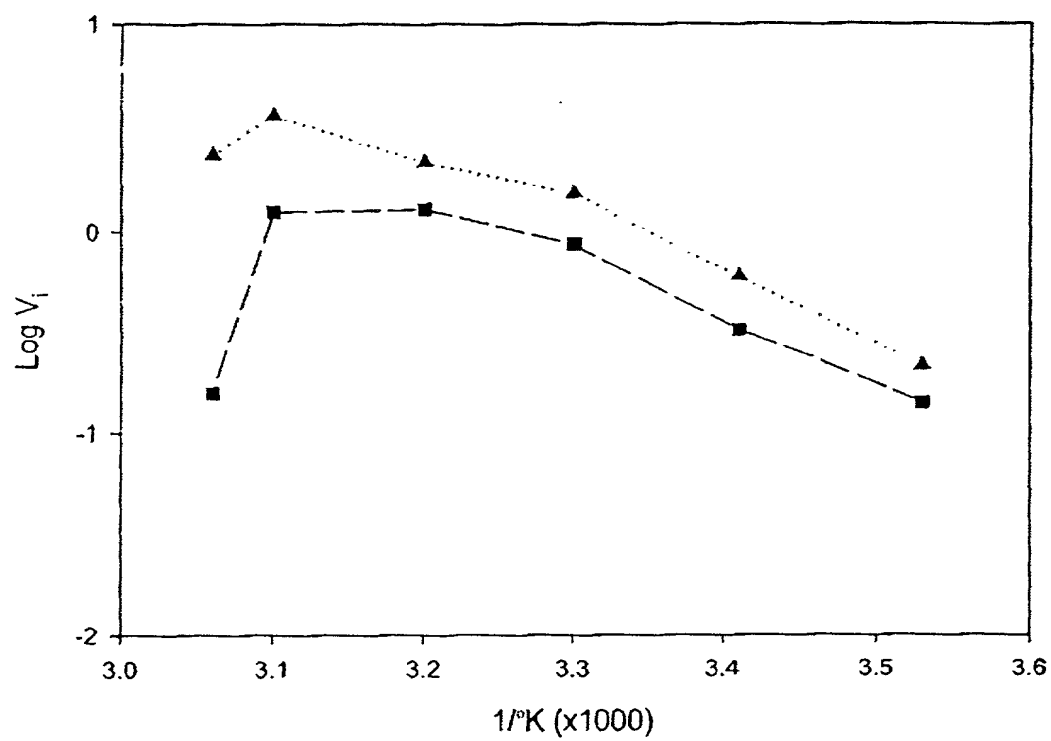


FIG 5